

IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1 – 19. (previously cancelled)

20. (twice amended) A method for relieving pain associated with an intervertebral disc having a disc nucleus pulposus and an outer annulus fibrosus surrounding the nucleus pulposus, comprising the steps of:

introducing a thermal transmitting element of a thermal probe into the outer annulus fibrosus of the intervertebral disc, the thermal transmitting element of the thermal probe not contacting the nucleus pulposus, the thermal probe defining proximal and distal ends and having a guidable region adjacent the distal end thereof, the guidable region characterized by having sufficient rigidity to advance within the outer annulus fibrosus of the intervertebral disc in response to an axial force exerted on the proximal end of the thermal probe while having sufficient flexibility to substantially follow and conform to an azimuthal course defined by the natural striata of the outer annulus fibrosus; and

supplying thermal energy from a thermal energy source to the thermal transmitting element to heat the outer annulus fibrosus adjacent the transmitting element sufficiently to relieve pain associated with the intervertebral disc.

21. (twice amended) The method according to claim 20 wherein the thermal probe includes a flexible probe portion and further including the step of advancing the thermal probe

whereby the flexible probe portion follows a generally arcuate path within the outer annulus fibrosus.

22. (twice amended) The method according to claim 21 wherein the step of advancing the thermal probe includes passing the flexible probe portion generally along an arcuate path defined by natural striata of the outer annulus fibrosus.

23. (twice amended) The method according to claim 21 wherein the step of advancing includes positioning the thermal transmitting element adjacent at least one of a posterior section, lateral section and posterior-lateral section of the outer annulus fibrosus.

24. (twice amended) The method according to claim 23, including the step of accessing the outer annulus fibrosus from a posterior-lateral section of the intervertebral disc.

25. (previously presented) The method according to claim 21 further including the step of positioning a cannula adjacent the intervertebral disc and passing the thermal probe through a lumen of the cannula into the outer annulus fibrosus.

26. (twice amended) The method according to claim 25 wherein the cannula includes an arcuate portion adjacent a distal end thereof and wherein, during the step of advancing the thermal probe, the arcuate cannula portion guides the flexible probe portion along the path through the outer annulus fibrosus.

27. (twice amended) The method according to claim 26 wherein the step of positioning includes at least partially introducing the distal end of the cannula into the outer annulus fibrosus.

28. (twice amended) The method according to claim 27 further including the step of angulating the arcuate portion to a desired orientation within the outer annulus fibrosus.

29. (twice amended) The method according to claim 20 further including the step of monitoring impedance of tissue to detect variations in tissue-type to thereby facilitate positioning of the thermal transmitting element in the outer annular fibrosus.

30. (previously presented) The method according to claim 20 further including the step of monitoring the position of the at least the thermal transmitting element with imaging means.

31. (twice amended) A method for relieving pain associated with an intervertebral disc, the intervertebral disc having a disc nucleus and an outer annulus fibrosus surrounding the disc nucleus, the method comprising the steps of:

accessing an intervertebral disc with a cannula;

advancing a thermal probe having a heat transmitting region through the cannula into the intervertebral disc to position the heat transmitting region of the thermal probe in at least one of posterior, lateral and posterior-lateral areas of the outer annulus fibrosus, the thermal probe being initially exposed to the outer annulus fibrosus upon exiting the cannula, the thermal probe defining proximal and distal ends and having a guidable region adjacent the distal end thereof, the guidable region characterized by having sufficient rigidity to [puncture and] advance within the outer annulus fibrosus of the intervertebral disc in response to an axial force exerted on the proximal end of the thermal probe while having sufficient flexibility to substantially follow and conform to an azimuthal course defined by the natural striata of the outer annulus fibrosus; and

supplying thermal energy from a thermal energy source to the heat transmitting end region to heat the at least one area to treat pain associated with the intervertebral disc.

32. (twice amended) The method according to claim 31 wherein the step of accessing includes advancing a distal end of the cannula through the intervertebral disc to position the distal end within the outer annulus fibrosus.

33. (twice amended) The method according to claim 32 wherein the cannula includes an arcuate portion adjacent the distal end thereof and further including the step of manipulating the arcuate portion to a desired orientation with respect to the outer annulus fibrosus.

34. (previously presented) The method according to claim 33 wherein the heat transmitting region of the thermal probe is substantially flexible and wherein during the step of advancing, the heat transmitting region bends within the arcuate portion of the cannula.

35. (previously presented) The method according to claim 32 wherein the cannula includes impedance means and wherein the step of accessing includes monitoring impedance of tissue to ascertain a location of the distal end of the cannula in relation to the intervertebral disc.

36. (currently amended) The method according to claim 35 wherein the step of monitoring impedance of tissue further includes monitoring a plurality of impedance interfaces including the tissue and a cortex of the intervertebral disc, the cortex and the outer annulus fibrosus of the intervertebral disc, and the outer annulus fibrosus and the nucleus of the intervertebral disc.